



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,414	12/03/2003	John Alexander Sollars JR.	5688	5563

7590

03/31/2006

John E. Vick
Legal Department, M-495
PO Box 1926
Spartanburg, SC 29304

EXAMINER

MCCREARY, LEONARD

ART UNIT	PAPER NUMBER
----------	--------------

3616

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/726,414		SOLLARS, JOHN ALEXANDER	
	Examiner		Art Unit	
	Leonard J. McCreary, Jr.		3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/3/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3, 5-8, 10-11, and 14-20 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. 6,796,578 to White et al. White discloses an airbag with a bag mounted sensor comprising the following:

- a. An inflatable airbag 60, said inflatable airbag being adapted for deployment into a deployment region within the interior of a vehicle, said inflatable airbag further having a leading edge configured for impact with a person 68, said leading edge comprising a conductive material 58; an electromagnetic field generating device 74 (column 5, lines 22-27), said device being adapted for generating an electromagnetic field within said deployment region; a sensing device, said sensing device 74 being adapted for detecting the presence within said deployment region of said conductive material; and a control system 72 adapted for receiving signals from said sensing device and in response sending feedback signals in real time, said feedback signals being configured for altering the characteristics of the deployment of said inflatable airbag (column 2, lines 34-65) (claim 1.)
- b. An inflation device, said inflation device being adapted for emitting gas into said airbag to inflate and thereby deploy said airbag into said deployment region, further wherein said control system 72 is adapted for sending said feedback signals to said inflation device in controlling the deployment of said inflatable airbag (column 5, lines 54-62) (claim 2.)

- c. The inflation device is adapted for releasing gas to a gas bypass pathway 78 upon receiving said feedback signals (column 4, line 66 – column 5, line 4) (claim 3.)
- d. An inflatable airbag 60, said inflatable airbag being adapted for receiving gas from an inflation device to accommodate expansion of said airbag into a deployment region within the interior of an automobile, said inflatable airbag further comprising a textile, wherein said textile comprises a leading edge that extends into said deployment region upon inflation of said airbag, said leading edge of said textile further comprising conductive material 58 (column 2, lines 38-40) wherein said conductive material is configured for generating an electromagnetic response when passing through an electromagnetic field 76 (column 5, lines 22-25); an electromagnetic field generating device 74, said device being mounted in the interior of said automobile, said electromagnetic field generating device being adapted for generating an electromagnetic field within said deployment region in the interior of said automobile (Fig. 2); an electromagnetic sensing device 74, said sensing device being adapted for detecting the presence and relative position within said deployment region of said conductive material (column 5, lines 5-10); and a control system 72 configured for receiving signals from said sensing device and in response dispatching feedback signals in real time during said deployment of said airbag, said feedback signals being configured for reducing the force applied by said leading edge of said airbag (column 4, line 59 – column 5, line 4) (claim 5.)

- e. An inflatable airbag 60 comprising a woven fabric, said fabric comprising a leading edge adapted for extending into the interior of a vehicle during inflation of said airbag, said woven fabric further comprising a conductive material capable of exhibiting an electromagnetic response in the presence of an electromagnetic field (column 3, lines 63-66) (claim 6.)
- f. The conductive material comprises fibers interwoven into said fabric of said airbag (column 5, lines 31-40) (claim 7.)
- g. The inflatable airbag of claim 7 wherein said fibers comprise a metallic filament (column 5, lines 31-40) (claim 8.)
- h. The conductive material is applied as a coating to said leading edge of said fabric (column 5, lines 31-40) (claim 10.)
- i. The conductive material comprises a metallic material (column 5, lines 31-40) (claim 11.)
- j. A method of altering the deployment positioning of an inflatable airbag during deployment of the airbag in response to the detected position of objects or out-of-position passengers in the pathway of the airbag, said method comprising:
 - (a) providing an inflatable airbag 60, said airbag comprising an inflation mechanism for deploying a fabric, said fabric having a leading edge, said leading edge comprising an electromagnetically conductive material 58; (b) providing an electromagnetic field generating device 74 and a control system 72; (c) generating an electromagnetic field 76 in the vicinity of said airbag; (d) deploying said airbag into said electromagnetic field; (e) electromagnetically sensing the

presence in said electromagnetic field of said conductive material of said leading edge of said airbag, and determining the position of said conductive material upon said leading edge of said airbag at more than one point in time to determine the characteristics of motion of said airbag during deployment; (f) comparing the characteristics of step (e) with predetermined ranges or values to detect if objects are present in the pathway of said airbag; and (g) sending feedback signals to said control mechanism, and (h) altering the conditions for deployment for said airbag in response to said detected objects (column 2, line 48 – column 3, line 11) (claim 14.)

k. The method of claim 14 wherein said characteristics of motion of said airbag which are determined in step (e) include values of the relative velocity of the leading edge of said airbag during deployment (column 5, lines 7-16) (claim 15.)

l. The method of claim 14 wherein said characteristics of motion of said airbag which are determined in step (e) include values of the acceleration of said airbag during deployment (column 5, lines 7-16) (claim 16.)

m. The method of claim 14 wherein said feedback signals alter the inflation mechanism by opening a gas flow bypass port (column 5, lines 3-5) (claim 17.)

n. The method of claim 14 wherein said electromagnetically conductive material in step (a) comprises metallic fibers (column 5, lines 34-36) (claim 18.)

o. The method of claim 18 wherein said metallic fibers are woven into said fabric of said airbag (column 5, lines 34-36) (claim 19.)

20. The method of claim 14 wherein said electromagnetically conductive material comprises a conductive coating (column 5, lines 34-36) (claim 19.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 stands rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,796,578 to White et al in view of U.S. 5,868,423 to Takimoto et al. The teachings of White are discussed above. Further, White teaches that the airbag pressure can be controlled by replacing the vent system with a two stage or variable inflation airbag (column 5, lines 54-62.) White does not explicitly state that the pressure control of the two stage airbag can be a result of inactivating a supplemental stage. Takimoto discloses an airbag system that controls the airbag pressure using multiple gas generating elements that can be activated (and inactivated) in various combinations (column 10, lines 43-56.) It would have been obvious to one of ordinary skill in the art at the time of invention to modify the airbag of White to include the multistage gas generator as taught by Takimoto so as to effectively control the pressure inside the airbag to provide the best protection for the vehicle occupant.

6. Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,796,578 to White et al in view of U.S. 6,216,546 to Bahr. The teachings of White are discussed above. White does not explicitly state conductive fibers woven into the fabric of the airbag can be a polymeric material. Bahr discloses a sensor arrangement for use in airbags comprising conductive fibers made of a polymeric material (column 2, lines 4-9.) It would have been obvious to one of ordinary skill in the art at the time of invention to modify the airbag of White to include the conductive polymeric material fibers as taught by Bahr so as to impart resilience to the material and thus decrease chances of interference caused by fiber deformation or fracture.

7. Claims 12-13 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,796,578 to White et al in view of U.S. 6,142,513 to Schoos et al. The teachings of White are discussed above. White further teaches that the sensor 58 can be active or passive so as to cooperate with the signal transceiver 74 (column 5, lines 27-30.) White does not explicitly state that the passive sensor can be a resonator. Schoos discloses a process for controlling the operation of a motor vehicle airbag comprising at least one electromagnetic (EM) field emitter and at least one EM field receiver arranged in such a way that the EM field is modified by the movement of the occupant due to one or more markings on the seatbelt (column 2, lines 16-31.) This marking(s) can include a resonator which is excited by an EM field (column 2, lines 37-44.) It would have been obvious to one of ordinary skill in the art at the time of invention

to modify the airbag of White to include the resonator(s) as taught by Schoos so as to provide a passive marking on the leading edge of the airbag capable of interrupting the emitted EM field without the need for a power source.

Conclusion

8. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. U.S. 6,203,059 to Mazur et al. discloses a seatbelt usage system comprising an EM field interrupted by metallic fibers woven into the seatbelt or metallic flakes coating the seatbelt wherein the airbag can be deactivated if the occupant is sensed to be out of position.

10. U.S. 6,443,488 to Kippelt et al. discloses a device for protecting vehicle occupants in a motor vehicle and a method for controlling the inflation of an airbag comprising sensors to detect occupant presence and position and a method of controlling the inflation of an airbag to minimize or eliminate injury to out of position occupants.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard J. McCreary, Jr. whose telephone number is 571-272-8766. The examiner can normally be reached on 0700-1700 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leonard J. McCreary, Jr.
Examiner
Art Unit 3616



PAUL N. DICKSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3800